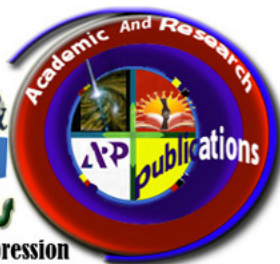


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Abstract

International Journal Of Agricultural Science & Technology

Edited by Manisha Verma



Cite current volume as 4(1)IJAST(2015) and so on....

ABSTRACT

IJAST

INTERNATIONAL JOURNAL
OF
AGRICULTURAL SCIENCE & TECHNOLOGY

Cite current volume as 4(1)IJAST(2015) and so on....

This Journal is an academic and peer-reviewed publication
(Print ISSN : 2393 - 9338)

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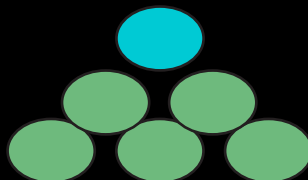
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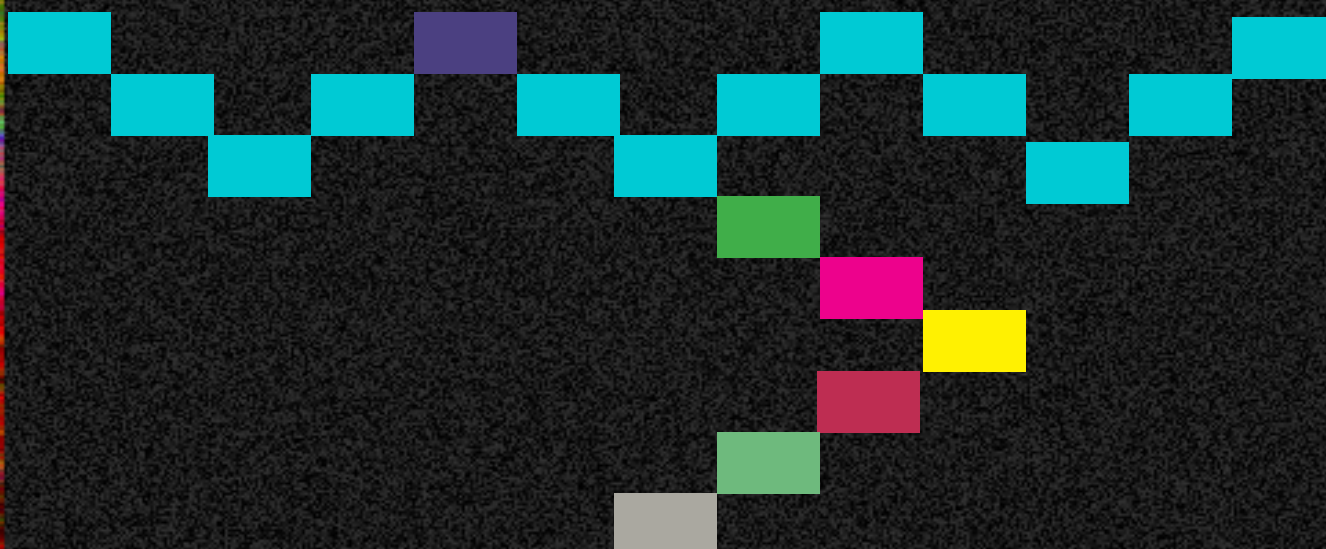
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ALLELOPATHIC EFFECT OF EUCALYPTUS TERETICORNIS CLONE3 ON GERMINATION AND GROWTH OF *Vigna mungo L*

V. D. Tripathi, A. Venkatesh and S. K. Dhyani

Abstract

The study was conducted to determine the allelopathic effect of *Eucalyptus tereticornis* clone 3 on urd (*Vigna mungo L.* Hepper) crop. Leaf extracts of *Eucalyptus tereticornis* clone 3 were used to run the experiment under laboratory condition. The aqueous extracts of leaf showed significant inhibitory effect on germination, root and shoot elongation of urd plants. The inhibitory effect was proportional to the concentrations of the extracts and the higher concentration (15%) had the strongest inhibitory effect. In plant part Leaf extract was more inhibitory effect compared to twig and root extract. From the obtained results, it can be concluded that, eucalyptus seem to be a potential threat to the pulses industry under small-scale farming condition. Therefore, it could be recommend that different remedial practices (like removal of excess leaf litters, planting after the rains) should be done before sowing pulses, in land previously planted with *Eucalyptus* in order to reduce the potential risks.

Key words: Allelopathy, Clone , *Eucalyptus tereticornis*, Germination and *Vigna mungo*.



USE OF MEDICINAL PLANTS FOR TREATMENT OF CANCER-A Review

Malika Pal

Abstract

Cancer is a major public health problem in both developed and developing countries. It was estimated that there were 10.9 million new cases, 6.7 million deaths, and 24.6 million persons living with cancer around the world in 2002. And the number of cancer deaths are increasing, because most of the times the intervention is too late because patients put up with the symptoms instead of seeking treatment.

Key Words: Cancer, Symptoms, Treatment, Cause of Cancer or The Molecular Basis of Cancer, Medicinal Plants And Traditional Medicine.



EFFECT OF DAIRY EFFLUENTS ON EARLY SEEDLING GROWTH OF *Pennisetum typhoides* (L)

Goutam Bhakta

Abstract

With the growing industrialization and urbanization environment degradation has now become challenging global problem. Among the industries food processing industrial effluents released from the dairy industries are rich in various kinds of nutrients like phosphate, Calcium, Nitrogen, Magnesium etc. and has good potential in utilization of released effluents as source of nutrients for the crop plants. To study the effect of dairy effluents on early seedling growth of *Pennisetum typhoides* (L). different parameters like i) Plumule and radicle ratio, ii) Fresh wt. and dry wt of germinated seeds, iii) Height of the stem, iv) Fresh wt. and dry wt. of stem, v) Root length, vi) no of leaves, vii) internodal length etc, of plants under various concentrations of milk plant effluent in compost rich and compost free soil are taken. The vegetative growth of pearl millet increases with the increase in concentration of effluent upto 80 percent decreases when irrigated with 100. conc. of effluent.

Key Words: Pearl Millet, Seedling Vegetative Growth, Dairy Effluent.



STUDY THE EFFECT OF DAIRY EFFLUENTS ON SEED GERMINATION OF HIGH NUTRIENT QUALITY PEARL MILLET-*Pennisetum typhoides*(L.)

Goutam Bhakta

Abstract

Today environmental degradation has become a global phenomenon due to industrialization and urbanisation. Most of the effluents contain varied groups of chemical compound including nutrients. This nutrient helps in fertilization of soil and would also increase productivity of the land. The present study deals with the effect of dairy effluent on seed germination of the crop high nutrient pearl millet *Pennisetum typhoides*(L) : The main objective of this study is the effect of dairy effluents on seed germination. Percentage of pearl millet in various concentrations of effluent (20%, 40%, 60%, 80%, 100% and control in laboratory in Petridis. The germination percentage of pearl millet decreased as the concentration of effluent increased.

Key words :- Pearl Millet, Dairy Effluent, Germination.



BIODIVERSITY CONSERVATION TO MITIGATE ENVIRONMENTAL POLLUTION

C.Y. Pathak, Debananda Roy, R.B. Jadeja,
Abhishek Gupta, Sumanta Das

Abstract

Biodiversity destructive economic activities are inefficient not merely because of the resulting resource misallocation but also because of the excessive scale of activity levels-exploitation, in relation to the limited availability of natural capital when the latter is complementary to human made capital. Efforts for conservation and management of our natural resources must derive from a set of clear objectives, mechanisms for action and commitment from all stakeholders through scientific research. The term development has both positive as well as negative impact on nature / environment. Whereas, the development brings about the awareness of conservation among people, it also leads to disturbance to the biodiversity. Therefore, the magnitude of environmental pollution should not be allowed to go out of proportion. This paper describes the role of forest resources as source for biodiversity conservation like controlling soil erosion, water conservation, land rehabilitation and carbon sequestration.

Key Words : Environmental Degradation, Climate Change, Carbon Sequestration, Biodiversity Conservation.



EFFECTS OF MICROMETEOROLOGICAL CONDITION AND ATMOSPHERIC INTERACTION DURING THUNDERSTORM

Anil Kumar, M. Kumar, L. D. Saraswat, N. C. Mahanti And V. Pandey

Abstract

The case study with using the abnormal weather condition during the thunderstorm activity was monitored weather variable with micrometeorological tower during the summer period of the year 2008, a micrometeorological tower of 32 m in height and surface observatory data sets was used to confine the micrometeorological condition during the convective condition and thunderstorm at BIT, Mesra, India. The objective of the present work is to study the response of surface layer parameter in the extreme weather condition and thunderstorm event and characterized from it during the phases, together with the statistical correlation. The various sensors were mounted on the tower to capture different meteorological phenomenon or physical dynamics of weather variables U_x , U_y and U_z along with time series with the accurately. Simultaneously, specific weather conditions during a selective period of study have been considered to observe the change in the performance of weather variables from fast response CSAT3 sonic anemometer and other slow response instruments. Also how this change affects the surface layer parameters with the presence of a typical weather system has been examined, surface layer parameters have good interrelation during deep convective situations and thunderstorm event during the summer or hot season in per humid region and during the start the event turbulent kinetic energy and correlation with the turbulent kinetic energy with T_s (Sonic temperature) was 0.52 at time of beginning the event.

Key Words : Thunderstorm, Correlation, Tke, Frictional Temperature.



PERFORMANCE OF COWPEA (*Vigna unguiculata* (L.) Walp) VARIETIES UNDER DIFFERENT LEVELS OF SPACING

LATA D. SARASWAT , A. KUMAR, N. J. VEHOL, G. T. SADERIA and H.C. PATEL

Abstract

A field experiment was conducted during Kharif season of the year 2004 to study the performance of cowpea varieties under different levels of spacing. Six treatment combinations consisting of three levels of varieties viz., V_1 - Pusa Phalguni, V_2 - Gujarat Cowpea-3 and V_3 - Gujarat Cowpea-4 and two levels of spacings. The growth and yield attributes of different varieties of cowpea were significantly influenced due to different levels of spacings except days to first and complete seedling emergence and treatment V_2 (GC-3) recorded significantly higher plant geometry, yield or yield attribute. The highest value of net C.B.R. (1:3.99) and net realization (`47197 ha^{-1}) was observed under treatment V_2 (GC-3), followed by V_3 (GC-4) with net crop benefit ratio (CBR) of 1:3.26 and net realization of `40872 ha^{-1} , narrow spacing, wider spacing resulted in the maximum growth and yield attributes, but the overall green pod yield net plot $^{-1}$ and hectare $^{-1}$ was found maximum under S_2 spacing level. Maximum plant height, number of branches plant $^{-1}$, minimum days to first flower emergence and 50 percent flowering, maximum pod length, number of seeds pod $^{-1}$, 100 seeds weight and green pod yield plant $^{-1}$ was recorded significantly the highest in wider spacing. But the maximum green pod yield net plot $^{-1}$ (10.29 kg) and hectare $^{-1}$ (12240 kg ha $^{-1}$) was found in narrow spacing. For securing higher green pod yield (12810 kg ha $^{-1}$), higher net realization (`49099 ha^{-1}) and higher net CBR (1:3.28) under middle Gujarat condition, it is advisable to grow cowpea variety GC-3 (Gujarat Cowpea-3) with narrow spacing of 30 cm x 10 cm.

Key Words: Intraction, Variety, Date Of Sowing, Spacing, Yield, Yield Attribute.



STATISTICALLY QUANTIFICATION ACCURACY OF AUTOMATIC WEATHER STATION AND SURFACE OBSERVATORY DATA OF GUJARAT STATE, INDIA

Ramesh T., Anil Kumar, Vyas Pandey and A. M. Shekh

Abstract

The present study evaluated technical analysis of AWS and SO data of 10 station of Gujarat, we analyzed as MAE, RMSE, PE, D and PD of Tmin, Tmax RH₁, RH₂ and BSS, Tmin range 15.2 °C to 23.2 °C for SO and 18.2 to 22.3 °C of AWS, MAE range 1.8 to 17.1 mean value 1.3 and highest 17.1 at S. K. Nagar, RMSE range 1.1 to 23.4 mean 1.9, the highest value was observed 23.4 at SKN and lowest 1.1 at Navsari and PE were range 5.2 to 14.9 mean value of PE 9.3 with highest value were 14.9 and lowest 5.2 at Nawagam, Tmin deviation range was -6.9 °C with PD 6 %. The Tmax range was 29.3 °C to 34.8 °C with highest value 34.8 °C of Tmax was observed in Vallabhaipur and lowest 29.3 °C at SKN form SO or Tmax from AWS were found 28.8 to 36 °C and highest 36 °C at Dhandhuka and lowest 28.8 °C, MAE range 1.1 to 5.5, mean 2.1 and highest value 5.5 and lowest 1.1 Sanand, RMSE 1.7 to 6.4, mean 2.7 highest 6.4 and lowest 1.7 at Navsari station similarly the PE range 5.2 to 22.3, mean PE 8.2, highest 22.3, lowest 5.2 at south Gujarat Navsari follow with lowest 5.2, Tmax deviation were -2.3 °C to 0.5 °C Tmean -1.0 °C, Tmean 0.5 °C at S.K. Nagar and Tmin -2.3 °C at Mangrol with PD -3.3 % lowest and highest 57.3 % at Sanand from SO, RH₁ from AWS were 75.3 to 84.7 %, mean 78.9 %, highest 84.7 % Devgardhbaria and lowest 75.3 % at Dhandhuka, MAE range 7.8 to 17.1 and highest 17.1 at S. K. Nagar and lowest 7.8 at Navsari and PE range 12.1 to 36.8 mean PE 22.3, highest PE 36.8 at Devgardhbaria, lowest 12.1 at Navsari, RH₁ deviation was -20.4 to 0.9 %, mean -11.6 % highest 0.9 %, the significant variation of relative humidity between the SO and AWS, MAE range 3.9 to 15.9, mean 9.0 and highest 15.9 at Mangrol and lowest 3.9, were PE range 15.2 to 34.4, mean 25.1 highest PE 34.4 at Devgardhbaria, lowest 15.2 and RH₂ deviation range -35 to -2 %, mean -11.6 % at Mangrol, lowest -2 % at Sanand with PD -11.6 %, PD mean were 16.2 % highest 24.2 % at Dhandhuka and minimum 13.7 % at Nawagam received lowest and average annual BSS, lowest value from AWS as SO, PE highest at Anand and lowest at Nawagam, the significant r^2 were observed with respective weather parameter between AWS to SO.

Key words: Weather Parameter, Statistical Technique, AWS, Surface Observatory.



EFFECT OF MOISTURE REGIME AND INTEGRATED NUTRIENT SUPPLY SYSTEM ON YIELD ATTRIBUTING CHARACTERS, YIELD AND WATER USE EFFICIENCY ON HYBRID RICE (*Oryza sativa* L.)

Dileep Kumar Maurya & B. N. Singh , Shatrughna Kumar Singh, Ashish Pandey, Satyendra Tiwari and Arvind kumar

Abstract

A field experiment was conducted to study the effect of moisture regime and integrated nutrient supply system on hybrid rice during kharif season 2010. Various treatments of moisture regime and integrated nutrient supply system significantly influences the yield attributing characters, yield and water use efficiency. Significantly superior result was found with the treatment of 7 cm irrigation 1 DADPW in respect to yield attributing characters viz., no. of effective shoots / running meter, no. of grains/ panicle, weight of grains/panicle, 1000 grain weight, grain and straw yield over 7 cm irrigation 4 & 7 DADPW. Application of recommended dose of NPK (150:75:60 kg ha⁻¹) through inorganic fertilizer found superior over rest of nutrient supply system in respect of yield attributing characters, grain yield and straw yield. Maximum water use efficiency was computed with 7 cm irrigation 7 DADPW. In case of nutrient supply system maximum water use efficiency was found with 100% recommended dose of NPK.

Key words : Hybrid Rice, Moisture Regime, Water Use Efficiency .



PRICE FLUCTUATION IN ONION: A CASE STUDY IN DISTRICT JAUNPUR OF EASTERN UP

Pramod Kumar, R. P. Kaushal and Ü. A. Şiddiqui

Abstract

The seasonal indices of arrivals and prices showed the degree of fluctuation from month to month and may be helpful to indicate the optimum times for sale of onion in the market, guides the policy makers in developing appropriate policy for stabilizing the prices round the year to protect the interest of producers, as well as, consumers of onion.

Keeping the above facts in due consideration, present study on "Price fluctuation in Onion. A case study of Jaunpur district of Eastern U.P. assumes special significance and importance. This study was carried out with the objective of analysis of seasonal fluctuation and trend in arrival and prices of onion.

Key words: Precipitation, Seasonal Rainfall, Sw Monsoon, Ne Monsoon Received, Decadal Rainfall, Temperature.



QUALITY PARAMETERS, HARVEST INDEX OF HYBRID RICE (*Oryza sativa* L.) AND ECONOMICS OF VARIOUS TREATMENTS UNDER VARIOUS LEVELS OF ZINC SULPHATE AND INTEGRATED NUTRIENT MANAGEMENT

Anil Kumar Singh and Alok Kumar Singh

Abstract

Experiment was conducted during kharif seasons of 2005-06 and 2006-07 at Student Instructional Farm of Narendra Deva University of Agriculture and Technology, Narendra Nagar (Kumarganj), Faizabad, Uttar Pradesh, India to study the Quality parameters, harvest index of hybrid rice (*Oryza sativa* L.) and economics of various treatments under various levels of zinc sulphate and integrated nutrient management. The quality, harvest index of hybrid rice was higher in the integrated application of organic (green manuring) and inorganic sources of nutrients as compared to sole application. The result showed that the maximum protein content, hulling and milling per cent was observed with 75% of recommended dose of fertilizer + green manure along with 40 kg zinc sulphate ha^{-1} . Similar trend was observed for net return. Finding of this study revealed that integrated application of organic with inorganic fertilizers helps in increasing the quality, harvest index of hybrid rice and also increase the net return.

Key words: Hybrid Rice, Inm, Net Return, Protein Content and Harvest Index.



ROLE OF SOCIO-ECONOMIC COMPONENTS OF RURAL PEOPLE'S PERCEPTIONS AND ADOPTION DECISION IN SGRY PROGRAMME

U. A. Siddiqui , R. P. Kaushal and Pramod Kumar

Abstract

On the basis of Raju et. al, (1995) we study about the role of socio-economic components viz. socio-economic profile, age, caste, education level, occupation, land holding of the respondents perceptions and adoption decision in SGRY programme in the selected villages. The majority of beneficiaries were found lower caste. It was significantly good in the caste of beneficiaries and non-beneficiaries. It was also found significant difference between beneficiaries and non-beneficiaries regarding their education level.

Key words: Sampoorna Gramin Rojgar Yojna (SGRY) , Socio-Economic components, caste of beneficiaries and non-beneficiaries.



THE COMPUTATION AND VALIDATION OF EVAPORATION, ENERGY FLUX OVER WEED (*Parthenium hysterophorus* L.) To LATAMOS-Data Near Bit Mesra Ranchi

Anil Kumar, M. Kumar, L. D. Saraswat, N. C. Mahanti, R. Mehta and V. Pandey

Abstract

The evaluation of weed evapotranspiration, energy from infrared temperature and LATAMOS data used to calculate as the residual component of the surface energy balance. This method has given good results over a full weed canopy cover with unstressed transpiration, in spite of the not well understood meaning of the aerodynamic resistance needed. A simple and more accurate method, which determines the Bowen ratio and latent heat flux over a reference weed cover area without knowledge of surface resistances, proposed and proportionality between b and a radiative Bowen ratio β_s is compute, Bowen ratio derived from surface, air temperatures and vapor pressure. The estimation of latent heat flux from temperatures, vapor pressure, and solar radiation measurements at first level one meter height from micrometeorological tower of 32 meter height. The new method gives an estimated error of around 3 to 10 % in front of the residual one, where wind speed has to be known over the defined height, the aerodynamic resistance to heat transfer over a weed canopy surface through micrometeorological tower and surface observatory data (IR thermometer). Diurnal variations of aerodynamic resistance have been analyzed with the using the micrometeorological tower data (optical weather sensor for temperature at one meter height, soil surface temperature, total incoming short wave radiation (SWI) and net radiation for the surface (R_{nt}).

Key words: Radiative Forcing, Weed Life Energy, Bowen Ration Energy Balance, Partition of Available Solar Energy.



PHYSICO-CHEMICAL CHARACTERISTICS OF CALCAREOUS SOILS IN DISTRICT DEORIA AND GORAKHPUR OF EASTERN UTTAR PRADESH

A.K.S. Parihar, Veerendra Dixit and Arvind Kumar

Abstract

This paper describes certain soil properties of calcareous soils of two districts Gorakhpur and Deoria of eastern part of Uttar Pradesh. Soil pH ranged from 8.1 to 8.9 from 6.9 to 8.4, and 5.8 to 8.3 in Bhat, Bangar and Kacchar soils, respectively. On comparison, EC showed a reverse pattern with pH in these soils. Bhat soil (Type I) has sandy loam to silt loam texture, Bangar (Type II) shows silt clay & sandy loam texture. Kacchar soil Type (III) was is more similar in texture in the Bhat (Type I). available nitrogen of these soils may be placed in the ascending order: Bhat (Type I), Bangar (Type II) and Kacchar (Type III) are richer in available phosphorus than Bhat (Type I), pH had highly significant negative relationship with available N, P and K soil types I and II whereas the soil type III significant positive relationship with available N, P and K, EC had significant negative correlation with available N and P in soil type I, whereas the soil type II EC had highly significant relationship with available N, P and K. Clay content has significant positive relationship with available N, P and K in soil type I and II, while in soil type III in a negative relationship.

Keywords : pH, OC, EC, CaCO₃, N, P and K.



EFFECT OF DIFFERENT LEVELS OF NITROGEN AND SULPHUR ON YIELD, YIELD ATTRIBUTES AND QUALITY OF RAJMASH (*Phaseolus vulgaris* L.)

K.K. Pandey, H.P. Sharma, and V.N. Pathak

Abstract

A field study was undertaken to investigate the response of Rajmash to different levels of nitrogen (0, 80, 120 and 160 Kg ha⁻¹) and sulphur (0, 20, 30 and 40 Kg ha⁻¹) regarding yield, yield attributes and quality. In this investigation, it was observed that application of 160 Kg N ha⁻¹ alongwith 40 Kg sulphur ha⁻¹ increased the seed yield (qha⁻¹), yield attributes and quality of seeds as compared to other levels of nitrogen and sulphur in both the years. The lowest yield and quality was noticed under no nitrogen and sulphur application.

Keywords : : Rajmash, nitrogen, sulphur, yield and quality.



EFFECT OF DATE OF SOWING, VARIETIES AND IRRIGATION REGIMES ON POD YIELD OF KHARIF GROUNDNUT IN MIDDLE GUJARAT AGRO-CLIMATIC CONDITION

S. B. Yadav, H. R. Patel, P. Parmar, B.I.Karande and V. Pandey

Abstract

A field experiment was conducted at B.A. College of agriculture; AAU, Anand during the kharif season of 2009. The experiment was carried out in split plot design with two dates of sowings of two groundnut cultivars with two irrigation levels. The results of field experiments revealed that pod and haulm yields as well as test weight and shelling percentage did not differ due to date of sowing. Similarly, growth and yield attributing parameters like weight of mature and immature pod per plant, number of mature and immature pods per plant, plant height and number of branches per plant were also not differed due to date of sowing. The differences in pod yield and shelling percentage, mature pod weight per plant were found significant due to varieties. The irrigation treatment exerted non significant effect. It might be due to well distributed rainfall received during the crop season.

Keywords : Dates of sowings, Irrigation Regimes, Pod Yield and Kharif Groundnut.



EFFECT OF FOLIAR SPRAY OF DIFFERENT SOURCES OF POTASSIUM ON FRUITING, YIELD AND SHELF-LIFE OF BER (*Ziziphus mauritiana* Lam.) Fruits cv. “ Banarasi Karaka ”

Amrish Srivastava, S.P Singh and Ajayendra Kumar

Abstract

An experiment was conducted in randomised block design with ten treatments and three replications at Horticultural Experiment farm, Banaras Hindu University, Varanasi (U.P) to study the effect of foliar spray of different sources of potassium on fruiting, yield and shelf-life of ber fruits. The results revealed that foliar spray of KNO_3 (2%) proved most effective in reducing fruit drop, increasing fruit retention and fruit yield with improved shelf-life of fruits.

Keywords : Foliar spray, Potassium, *Ziziphus mauritiana* Lam, Ber.



EFFECT OF NITROGEN SCHEDULING ON GROWTH YIELD AND QUALITY OF LATE SOWN WHEAT

Asheesh Kumar, Pandey, R. S. Kureel, Bhagwan Singh, H. P. Tripathi, Ghanshyam Singh, Suresh Kumar and Arvind Kumar

Abstract

The study was conducted at the Agronomy Research Farm of Narendra Deva University of Agriculture and Technology, Kumarganj, Faizabad (U.P.) during rabi season of 2008-09 to evaluate the nitrogen doses and nitrogen scheduling for better growth, yield, quality of wheat. The treatments were laid out in randomized block design with 4 replications on silt loam having low organic (0.30%), nitrogen (203), medium in phosphorus (15.25) and (265) kg ha⁻¹. All the growth and yield attributes increased significantly with increasing nitrogen doses up to 150 kg ha⁻¹. Application of every dose of nitrogen showed significant superiority over 100 N kg ha⁻¹ and control. Grain as well as straw yield increased with increase in nitrogen dose recording maximum yields of 36.13 q ha⁻¹ and 54.89 q ha⁻¹ of grain and straw yield with 150 kg ha⁻¹, respectively. The growth character like plant height was significantly maximum under ¼ basal + 45 % at 1st irrigation + ¼ at flowering + 5 % at milk stage foliar being at par with T₅, T₄ and T₃ and nitrogen scheduling were significantly superior over T₁ and T₂. The nitrogen scheduling had significant effect on nutrient uptake by nutrient uptake 119.31 kg N, 22.23 kg P and 105 kg K ha⁻¹ crop recording significantly higher 119.31 kg N ha⁻¹ under ¼ basal + 45 % at 1st irrigation + ¼ at flowering + 5 % at milk stage foliar being at par with T₅ and T₄ and significantly higher than rest of treatments. The yield components like effective tillers m⁻² row length, spike length (cm) number of grain spike⁻¹, grain and straw yield of wheat q ha⁻¹ and NPK uptake by crop were maximum under T₆ and at par with T₅, T₄ were significantly over T₃, T₂ and T₁.

Keywords : nitrogen doses and nitrogen scheduling, randomized block design.



FLUORIDE INDUCED BIOCHEMICAL ALTERATIONS IN THE GILLS OF STINGING CATFISH, *Heteropneustes fossilis* (Bloch.)

Sandeep Bajpai and Madhu Tripathi

Abstract

Nature gives life to everything by means of water. Natural water sources are often contaminated by partially treated or untreated wastes of industrial and agricultural origin containing various hazardous pollutants. Among them, fluoride (F^-) has been emerged as one of the major pollutant. It is a persistent bioaccumulator that accumulates in the visceral organs of animals including fish. Elevated level of fluoride has been reported to disturb the metabolic activity that is interlinked with the structural integrity of cells and tissues and alters normal biochemical profile of the exposed organisms. In view of this, the present study has been designed to investigate the effect of fluoride on different biochemical constituents such as protein, lipid, glycogen and cholesterol in gills of *Heteropneustes fossilis*, a popular edible freshwater catfish of India. The fish were divided into three groups having 15 fish in each. Group I (without any treatment) maintained in dechlorinated tap water served as control, whereas group II and III were exposed to 35 mgF/L and 70 mgF/L respectively. After 60 days of exposure, the levels of biochemical constituents in gill tissue were analyzed following standard protocols. Exposure of fish to different sub-lethal concentrations revealed 'concentration dependent' depletion in the biochemical constituents of gills in comparison to control. The possible reasons for depletion of biochemical contents after fluoride exposure have also been discussed.

Keywords : Fluoride, sub-lethal toxicity, *Heteropneustes fossilis*, biochemical changes.

TOXIC, REPELLENT AND POPULATION SUPPRESSANT ACTIVITIES OF SELECTED SPICE POWDERS TOWARDS COLEOPTERAN BEETLES INFESTING STORED GRAINS

Veena P. Swami, Amrita Singh, Ashok Kumar and Tabrez Ahmad

Abstract

Spices are commonly used in food for flavor; fragrance and color. Some commonly used spices in Indian kitchen were evaluated for repellency, contact and fumigant toxicity, and population suppressant activities against two stored grain insects, *Rhyzopertha dominica* and *Sitophilus oryzae*. The spices were used either singly or in combinations. Powders of *Foeniculum vulgare* fruit, *Coriandrum sativum* fruit and leaf showed toxicity against test insects with LD50 values ranging from 17.8-20.0g/100g food in contact assay. In the space trial the leaf powder of *Laurus nobilis* was found to have fumigant toxicity towards adults of *Rhyzopertha dominica* and *Sitophilus oryzae* with LC50 values of 9.81 and 16.7g/lit respectively. The repellency assay revealed 100.0% repulsion towards adults of *Rhyzopertha dominica* and *Sitophilus oryzae* by fruit powder of *Cuminum cyminum*. Similarly powder of *F. vulgare*, *P. nigrum* and *C. cyminum* resulted into complete inhibition of progeny production against *Rhyzopertha dominica* and *Sitophilus oryzae*.

The binary mixture of *L. nobilis* and *C. sativum* showed both contact and fumigant toxicity. Similarly binary mixtures of *C. cyminum* and *F. vulgare* showed both repellent and progeny development inhibition against *Rhyzopertha dominica* and *Sitophilus oryzae*.

Keywords : *Rhyzopertha dominica*, *Sitophilus oryzae*, plant powders, toxicity, repellency, and progeny suppressant.

EFFECT OF DIFFERENT LEVELS OF NITROGEN AND SULPHUR 1 ON GROWTH AND YIELD OF RAJMASH (*Phaseolus vulgaris* L.)

K.K. Pandey, H.P. Sharma, and V.N. Pathak

Abstract

A field experiment was conducted during the Rabi season. To find out the effect of different levels of nitrogen and sulphur on growth and yield of Rajmash. Application of 160 Kg nitrogen and 40 Kgsulphur ha⁻¹ increased the plant height, number of branches, green leaves and shoot dry weight per plant, days to maturity and seed yield significantly as compared to control and other levels of nitrogen and sulphur in both the years. The lowest growth and yield of Rajmash was recorded under no nitrogen and sulphur application.

Keywords: Rajmash, nitrogen, sulphur, growth and yield.

IMPACT ASSESSMENT OF CLIMATE CHANGE ON WHEAT YIELD OF MIDDLE GUJARAT REGION

Yadav S.B., Patel H.R., Kumar A. and Pandey V.

Abstract

The impact of projected climate change on wheat (cv. GW-496 and GW-322) yield have been studied for Anand station of middle Gujarat Agro-climatic region using PRECIS output of A2 and base line data. Yield simulation study was performed by InfoCrop model. The field experiment data on wheat cv. GW-496 and GW-322 during the year 2005-2007 and 2006 to 2009 respectively have been used to calibrate and validate the model. The weather condition as projected by A2 scenario (2070-2100) showed that there will be 13.7 % higher rainfall as compared to base line (1960-90). The mean maximum and minimum temperature will be higher to the tune of 5.1 and 3.6 OC as compared to their base temperature of 29.8 and 19.1 OC. The variations in wheat yield of both the cultivars showed that overall highest yield was observed in late sown condition (30th Nov.) and lowest in early sown (1st Nov.). Overall D3 higher biomass and LAI were observed in late sowing (D3) as compared to rest of the sowing. Higher days of anthesis were recorded in early (1st Nov.) sowing. Nearly 38 and 43 % yield reduction was noted in GW-496 and GW-322 as compared to their base yield during projected period. The maximum temperature during February which coinciding with the flowering and milking stage of late sowing of GW-496 and jointing and flowering stage of very late sowing of GW-322 varieties was negatively associated with the yield. The late sowing (30th Nov.) of both the cultivars showed positive gain in yield as compared to very early (1st Nov.) and early sowing (15th Nov.). Higher yield gain was observed by cv. GW-322 as compared to cv. GW-496.

Keywords: PRECIS, simulation, InfoCrop.



PRODUCTIVITY ANALYSIS OF RAINFED RICE OF EASTERN UTTAR PRADESH UNDER SW MONSOON PERIOD

Padmakar Tripathi and Arvind Kumar

Abstract

Rice is grown under more diverse environmental conditions than any other major food crop in the world. The success or failure of rice crops both in rainfed and irrigated agriculture is closely related with the rainfall pattern hence analysis of rainfall and its close linkage with productivity will provide basis for crop planning and management also for enhancing and sustaining the rice productivity in rainfed area specially where flood and drought are frequent. Influences of different weather on yield of wheat in different agro-climatic regions have been studied by Morey and Sadaphal (1981). Similar study of rice yield analysis during Kharif season with special reference to rainfall was made by Rao and Rajput (1986).

The state of U. P. accounted for 5.92 billion hectare under paddy crop with annual productivity of 21.76q/ha whereas, in Eastern U. P. it stood at 20.46 q/ha (Singh & Yadav, 2000). Keeping in view, similar analysis has been made on rice productivity of Eastern U. P. and to identify the climatic constraints limiting the productivity of rice in the region.

Keywords: Rainfed rice, Monsoon period.



THE INFLUENCE OF TEMPERATURE ON THE YIELD OF WHEAT AT EPZ OF EASTERN U.P.

R. P. Kaushal, K. K. Pandey, Arvind Kumar

and Padmakar Tripathi

Abstract

Manral (1983) represented the results of a study on the association between the significant 24 hours changes of maximum and minimum temperature over airport during the five year period (1972-76).

Abraham (1965) has applied the Fisher's method to see the joint relationship of crop yield and weather variable (rainfall and temperature). Normal, Lognormal and Pearson's type distribution were studied for each year separately for weather variable maximum & minimum temperature. We found that Normal Distribution fitted only in case of maximum temperature for the year 1990 & 1993. Pearson's type I distribution fitted in all the years for weather variable maximum & minimum temperature except in few of cases. Pearson's type IV for years 1992 in case of maximum temperature, 1994 in minimum temperature. Pearson's type II distribution fitted for the year 1994 in case of maximum temperature and for all the years for minimum temperature. For forecasting of wheat yield were used three models as linear, nonlinear (Cobb-Douglas), square root with and without coefficient 'c' and the square root without coefficient 'c' model selected as the best.

Keywords : Frequency distribution, Weather parameters, Linear model, Non-linear model, F-test.



SOME GUT LUMEN PARASITIC PROTOZOA INFECTIONS IN ECONOMICALLY IMPORTANT FISHES : A Look Out

Kavyanjali Shukla

Abstract

This document presents information about of some of the gut lumen protozoan diseases of freshwater fishes that will be helpful for fish culturists and the public sector on the challenges faced in fish culture and fishery industry. The description, taxonomy, diagnosis, life cycles, biology, epizootiology and control with special references to Coccidiosis, Cryptosporidium Infections, Haemoprotozoa (Haemoflagellates), Haemosporidia – Dactylosoma and Hemogregarines are reviewed in this study.

KeyWords : Parasitic protozoa, Gut lumen, Fishes, Economic importance.



THE EFFECT OF WEATHER PARAMETERS, CULTURAL PRACTICES ON GROWTH AND YIELD OF SOYBEAN (*Glycine max.* [L] Merrill) UNDER DIFFERENT DATE OF SOWING AND FOUR LEVELS OF SPACING

Anil Kumar and V. Pande

Abstract

Soybean (*Glycine max.* [L] Merrill.) Field experiments conducted during Kharif in year 2004 at Anand (22°35'N, 72°55'E, 45.1 m above mean sea level) of Soybean variety G.S-2, with three date of sowing (D₁, D₂ and D₃) and four levels of spacing (S₁, S₂, S₃ and S₄) with four replication, seed yields were affected significantly by different dates of sowing, and also different inter and intra spacing of the soybean crop in the varying cultural practices and agronomical management. The differences for significance were tested at 5 percent level of significant data analysis revealed that the seed yield of soybean was significantly influenced by the sowing dates (S₁, S₂ and S₃) and plant population. The treatment S₄ having lower plant 1, 2, 3 4 3 population (33.3 plant m⁻²) produced significantly higher seed yield than that of treatment S₁ having 2 higher plant population (44.4 plant m⁻²) might be due to the fact that it is not only the plant population but also the plant geometry, which determines the growth and yield of the crop. Among the sowing dates treatments, treatment D₁ (timely sown on 16-6-2004) produced significantly highest yield (1817 kg ha⁻¹) 1 however, it was at par with treatment D₂ (1784.7 kg ha⁻¹). The seed yield of soybean was found to decrease 2 with delay in sowing. The late sown crop (D₃) recorded reduction in yield by over time-sown crop 3 (treatment D₃) interaction effect of dates of sowing and spacing on seed yield revealed that the timely 1 sown crop with high plant population (D₁ S₄), that combination are sown on 16th June with spacing 1 4 (30x5cm) had produced significantly highest yield over all the treatment combination except D₁ S₄ which 1 4, was at par with D₂ S₄. Spacing did not have significant influence on the test weight of soybean and 1 1 harvesting index were influenced by both the treatment i.e. either date of sowing and four levels of spacing of soybean, The plant population or spacing had also significant influence on the Stover yield of soybean, highest Stover yield (5678.7 kg ha⁻¹) was recorded with treatment S₄ (having maximum plant 4 population), which was at par with treatment S₃. However, these two treatments were significantly 3 superior over the first two treatments viz., S₁ and S₂.

KeyWords : Soybean, yield attributes, sowing dates and grain yield, interaction effect.

COMPARISON OF THE ESTIMATORS FOR THE VARIOUS COMPONENT OF DEVELOPMENT AND DISPARITIES IN TWO VILLAGES OF DISTRICT SULTANPUR UTTAR PRADESH

R. P. Kaushal and Sunil Kumar

Abstract

Scientific survey sampling as reported by Neyman (1934) classic work and subsequent development [Hansen et al. (1963); Mahalanobis (1946), Hartley and Rao (1968), Parihar and Srivastava (2003) and Rao (1962)] provides the remarkable ability to obtain useful inferences about large populations from modest samples with measurable uncertainty for estimating proportion, mean and totals. Ratio estimate of population total can be obtained by separate ratio estimator and combined ratio estimator as given by Hansen et al. (1946). Vikas et al. (2006) highlighted with the use of information technology in the linkages of agricultural sectors such as natural resource management, infrastructure development and agriculture marketing can be developed for economic development of the poor and marginal Indian farmers and societal development. The use of information technology for development of agriculture, a core sector of Indian economy is yet in an infant stage and the growth of this baby is very slow. In view of 73th and 74th amendment of constitution in 1992 pertaining to the panchayat and municipality respectively the demand for the estimate at small cluster of villages/ blocks is all the more important. In view of these considerations villages Raincha and Soranav falling in Baldirai block of Musafirkhana tehsil in district Sultanpur have been selected. Comparison of villages Raincha and Soranav on pattern of the Scores/Index developed by Parihar et al., (2004). The methodology adopted is simple in application and appears to be a good benchmark.

Keywords: Survey sampling, Ratio estimator (Separate and Combined), Simple random sampling, Stratified sampling, Post-stratification.

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